

AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in this application.

LISTING OF CLAIMS

1. (Currently amended) A data processing system ~~device~~ for combining a current image of an object and a map image of the dwell region of the object, comprising ~~an imaging means for producing a current image, a sensor device for detecting at least one parameter that describes a varying state of the dwell region of the object, a data-processing system having a~~ memory for storing a number of map images which are categorized according to a varying state of the dwell region of the object, and a monitor for displaying the combination of the current image and the section of the map image, wherein the current image and the map image are from different imaging sources, and wherein the data-processing system is arranged
 - a) to estimate the position of the object in the current image in relation to the map image, and
 - b) to combine the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image using only a section of the map image which just covers the region around the object.
2. (Previously presented) The device of claim 1, wherein the object is located in a path network and the map image at least partially reproduces the path network.
3. (Currently amended) The device of claim 1, wherein the different imaging sources are a CT picture and a magnetic resonance picture ~~map image contains additional information about the structures or functions of the dwell region of the object.~~
- 4-6. (Cancelled)

7. (Previously presented) The device of claim 1, wherein the data-processing system is arranged to select from the memory a map image whose associated state of the dwell region of the object is a best possible match for the state of the dwell region during the current image.

8. (Previously presented) The device of claim 1, wherein the data-processing system is arranged to assign in the map image to each pixel a probability that it belongs to a spatially-defined structure.

9. (Previously presented) The device of claim 1, wherein the data-processing system is arranged to produce a distance image from the map image by a distance transformation.

10-12. (Cancelled)

13. (Currently amended) A computer-readable ~~medium~~ memory comprising instructions for performing a method for combining a current image of an object and a map image of the dwell region of the object, wherein the current image and the map image are from different imaging sources, the method comprising the following steps:

- a) estimating the position of the object in the current image in relation to the map image;
- b) combining the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image, using only a section of the map image which just covers the region around the object.

14. (Cancelled)

15. (Previously presented) The device of claim 8, wherein the spatially-defined structure is a path network.

16-17. (Cancelled)

18. (Previously presented) The device of claim 1, wherein only a section of the current image is used.

19. (Currently amended) The computer-readable memory method of claim 13, wherein in the step of combining the map image with the current image, only a section of the current image is used.

20. (Currently amended) A data-processing system for combining a current image of an object and a map image of the dwell region of the ~~object~~ object, wherein the current image and the map image are from different imaging sources, the system comprising a computer-readable memory medium comprising instructions for performing a method comprising:

storing a current image and a number of map images;

categorizing the map images according to a varying state of the dwell region of the object;

estimating the position of the object in the current image in relation to the map images; and

combining the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image using only a section of the map image which just covers the region around the object.

21. (Previously presented) The system of claim 20, wherein the object is located in a path network and the map image at least partially reproduces the path network.

22. (New) The data processing system of claim 1, wherein one of the different imaging sources provides an image showing the position of an organ, an image showing the formation of a blood vessel, or an image showing metabolic activity.

23. (New) The data-processing system of claim 20, wherein the different imaging sources are a CT picture and a magnetic resonance picture.

24. (New) The data-processing system of claim 20, wherein the data-processing system is arranged to select from the memory a map image whose associated state of the dwell region of the object is a best possible match for the state of the dwell region during the current image.

25. (New) The data-processing system of claim 20, wherein the data-processing system is arranged to assign in the map image to each pixel a probability that it belongs to a spatially-defined structure.

26. (New) The data-processing system of claim 20, wherein the data-processing system is arranged to produce a distance image from the map image by a distance transformation.